

Coaxial Low Pass Filter

50Ω

*DC to 1400 MHz

VLF-1400+



Generic photo used for illustration purposes only

CASE STYLE: FF704

Connectors	Model
SMA	VLF-1400+

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Maximum Ratings

Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max. at 25°C
DC Current Input to Output	0.5A max. at 25°C

* Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Features

- rugged uni-body construction, small size
- 7 sections
- excellent power handling, 10W
- temperature stable
- low cost
- protected by U.S. Patent 6,943,646

Applications

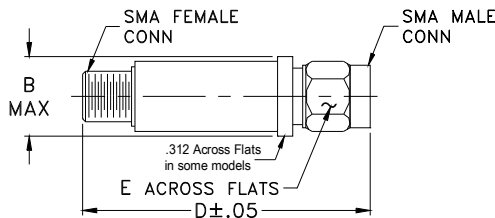
- harmonic rejection
- transmitters/receivers
- lab use

Electrical Specifications at 25°C

PASSBAND (MHz) (loss < 1 dB)	fco, MHz Nom. (loss 3 dB)	STOP BAND (MHz) (loss, dB)			VSWR (:1)		NO. OF SECTIONS
		f 20 Min.	30 Typ.	fr 20 Typ.	Stopband Typ.	Passband Typ.	
Max.	Typ.	Min.	Typ.	Typ.	Typ.	Typ.	
*DC-1400	1700	2015	2100-6600	6800	20	1.2	7

* Not for use with DC voltage at input and output ports

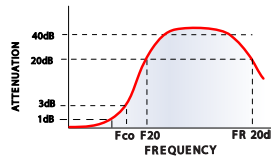
Outline Drawing



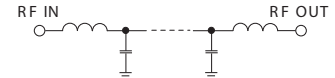
Outline Dimensions (inch)

B	D	E	gra
.410	1.43	.312	1
10.41	36.32	7.92	

typical frequency response

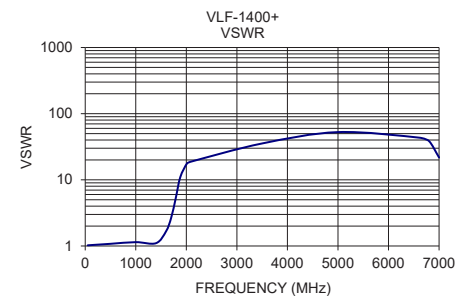
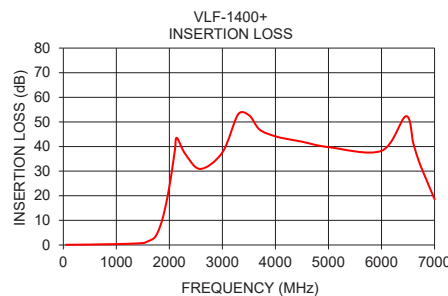


electrical schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	0.07	1.02
500	0.17	1.08
1000	0.35	1.14
1400	0.62	1.10
1600	1.28	1.67
1700	2.55	2.67
1790	5.56	5.25
1880	11.44	10.96
2015	25.70	17.75
2100	37.96	18.90
3500	53.01	35.46
5000	39.77	52.65
6600	41.25	43.44
6800	28.87	38.61
7000	18.61	21.73



Notes

- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp



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Page 1 of 1

Coaxial Low Pass Filter

VLF-1400+

Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)			INPUT RETURN LOSS (dB)			OUTPUT RETURNLOSS (dB)		
	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C	@ -55° C	@ +25° C	@ +100° C
50	0.07	0.07	0.09	41.65	38.56	37.24	42.08	38.85	37.07
100	0.08	0.09	0.10	40.53	39.16	37.89	44.07	40.32	37.74
500	0.14	0.17	0.23	28.75	28.47	27.84	35.95	36.90	35.05
800	0.23	0.30	0.36	24.83	24.34	23.66	27.69	27.72	27.28
1000	0.28	0.35	0.44	23.70	23.52	23.33	25.44	25.84	26.22
1400	0.47	0.62	0.73	28.95	26.23	24.22	32.21	28.39	25.83
1500	0.62	0.82	1.00	19.51	18.02	16.83	20.85	19.29	18.08
1540	0.74	0.96	1.18	16.81	15.57	14.51	17.87	16.61	15.65
1700	1.98	2.55	3.14	7.66	6.85	6.18	8.52	7.83	7.31
1710	2.14	2.78	3.39	7.16	6.38	5.77	8.04	7.39	6.89
1765	3.49	4.44	5.38	4.72	4.17	3.76	5.55	5.14	4.82
1850	7.52	9.11	10.61	2.16	2.01	1.92	2.87	2.81	2.77
1915	12.47	14.55	16.47	1.27	1.32	1.36	1.81	1.92	1.98
1960	16.68	19.15	21.39	1.00	1.10	1.20	1.48	1.62	1.71
1975	18.21	20.81	23.23	0.94	1.06	1.17	1.38	1.52	1.65
2015	22.67	25.70	28.61	0.83	0.98	1.11	1.17	1.34	1.46
2050	26.94	30.48	34.05	0.78	0.94	1.07	1.08	1.23	1.37
2100	33.44	37.96	43.04	0.74	0.92	1.07	0.94	1.11	1.23
2105	34.10	38.72	44.04	0.73	0.91	1.06	0.93	1.09	1.20
2140	38.45	43.52	49.48	0.72	0.90	1.07	0.86	1.01	1.13
2300	37.05	36.97	36.91	0.69	0.88	1.06	0.65	0.79	0.91
2585	30.72	30.90	31.10	0.66	0.88	1.07	0.46	0.60	0.75
3000	37.03	37.63	38.20	0.53	0.71	0.84	0.36	0.50	0.63
3300	51.48	53.20	54.91	0.41	0.59	0.68	0.35	0.48	0.61
3510	53.39	52.55	51.86	0.33	0.51	0.59	0.35	0.49	0.57
3700	47.03	46.90	46.81	0.29	0.47	0.58	0.32	0.44	0.56
4000	43.93	44.14	44.16	0.22	0.40	0.54	0.29	0.41	0.50
4300	42.67	42.75	42.71	0.17	0.37	0.52	0.28	0.41	0.49
4500	41.90	41.97	41.97	0.13	0.36	0.53	0.26	0.38	0.47
5000	39.71	39.77	39.75	0.12	0.33	0.54	0.23	0.36	0.45
6000	37.58	38.27	38.78	0.12	0.34	0.57	0.15	0.29	0.42
6460	47.37	52.32	51.58	0.14	0.37	0.59	0.14	0.31	0.48
6600	46.40	41.25	38.29	0.16	0.40	0.62	0.15	0.35	0.52
6700	37.39	34.29	32.11	0.15	0.42	0.63	0.15	0.36	0.53
6800	31.38	28.87	26.88	0.20	0.45	0.69	0.16	0.39	0.60
7000	21.22	18.61	16.20	0.35	0.80	1.28	0.30	0.65	1.10
7235	7.07	6.43	8.02	5.18	7.01	3.93	3.84	4.83	3.08
7500	12.02	13.12	14.01	0.73	0.83	0.92	0.64	0.72	0.87
8000	16.07	16.21	16.36	0.24	0.49	0.65	0.31	0.53	0.74
8500	15.20	18.73	19.29	0.65	0.72	0.66	1.04	1.11	0.95
9000	17.05	17.21	17.28	0.20	0.46	0.61	0.38	0.56	0.72

REV. X1
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Page 1 of 1



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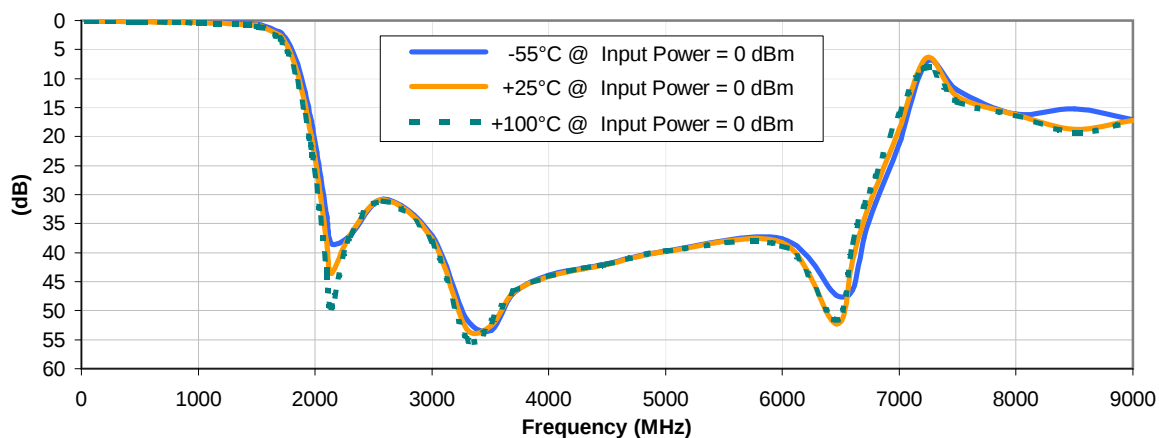


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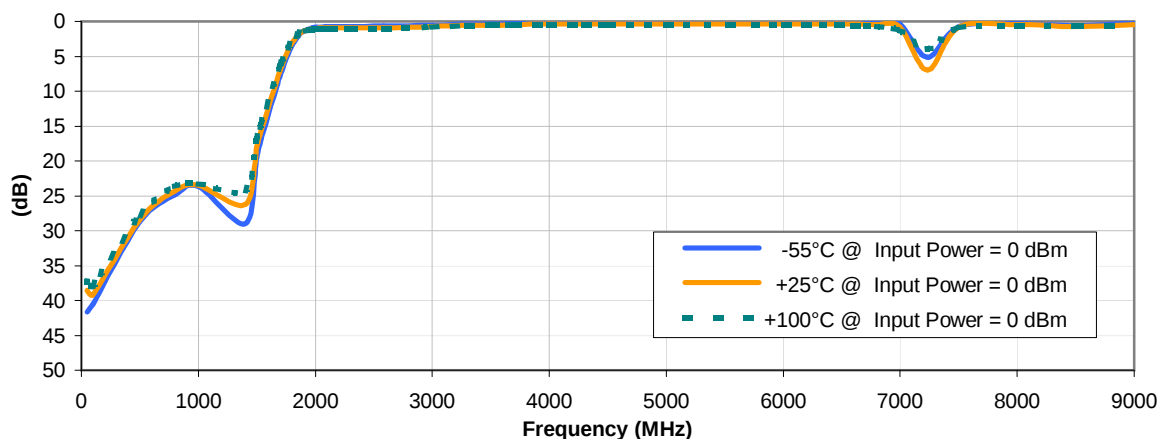
Typical Performance Curves

VLF-1400+

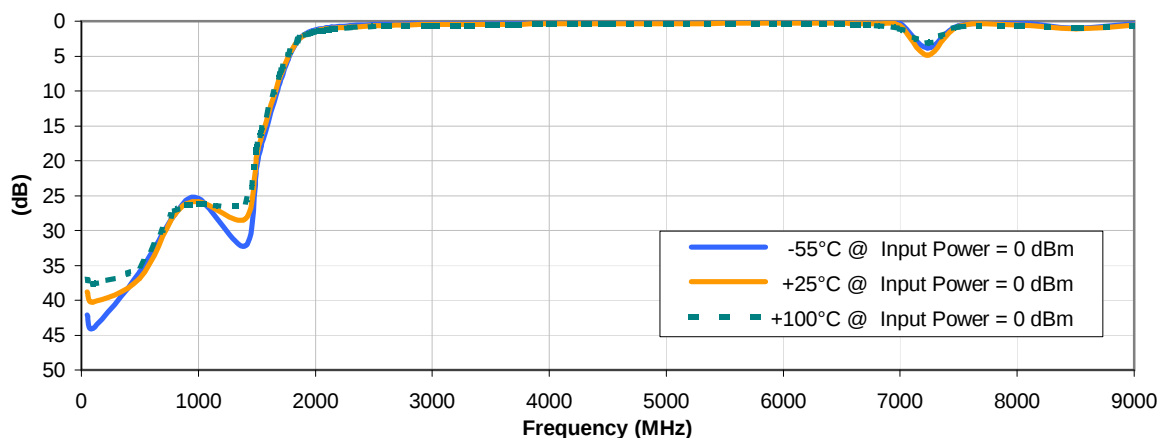
INSERTION LOSS vs. TEMPERATURE



INPUT RETURN LOSS vs. TEMPERATURE



OUTPUT RETURN LOSS vs. TEMPERATURE



REV. X1
VLF-1400+
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Page 1 of 1



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Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF704	--	.410 (10.41)	--	1.43 (36.32)	.312 (7.92)	10.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.



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RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 100°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I